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Bistability in Resonant Fermi Superfluid[1] LEI JIANG, HAN PU, Rice University, ANDREW ROBERTSON, HONG LING, Rowan University — The resonant two-channel Fermi superfluid model can be mapped to a quantum optics model that describes a single-mode laser field, subject to Kerr nonlinearity, interacting with an ensemble of inhomogeneously broadened two-level atoms. Using this analogy, we show that under proper conditions bistability will occur in resonant Fermi superfluids, a matter wave analog of a similar phenomenon encountered in nonlinear optical systems.

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